

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Joel Stanford
Mechanical/Agricultural/Construction
Section

Date: August 11, 2011

Thru: Daniel Menendez, Team Leader
Air Dispersion Modeling Team (ADMT)

From: Justin Cherry
ADMT

Subject: Modeling Audit – Building Materials Corporation of America (RN100788959)

- 1.0 Project Identification Information.
Permit Application Number: 7711A
NSR Project Number: 165555
ADMT Project Number: 3521
NSRP Document Number: 417278
County: Dallas
ArcReader Published Map: <\\Msgiswrk\APD\MODEL PROJECTS\3521\3521.pmf>

Modeling Report: Submitted by Trinity Consultants, April 2011, on behalf of Building Materials Corporation of America. Supplemental information was received August 2011.

- 2.0 Report Summary. The modeling analysis is acceptable. The results are summarized below.

The applicant previously submitted modeling in July 2010, which was subsequently approved by the ADMT (NSR document number 399077). In the previous analysis, the applicant proposed to increase the stack heights on EPNs 8A, WHBLR1, HTR7, and HTR 8 to 57 feet from their existing heights. In addition, EPNs HTR7 and HTR8 were represented without low NO_x burners. In this analysis, the applicant proposes to include low NO_x burners for EPNs HTR7 and HTR8 and keep the stacks of the four EPNs mentioned above at their original heights (i.e. not increasing the stacks heights to 57 feet). The applicant's demonstration is to illustrate how these changes would result in a decrease for these four sources when compared to the original site-wide modeling demonstration for 1-hr NO₂.

Table 1. Modeling Results for Minor NSR NAAQS AOI				
Pollutant	Scenario	Averaging Time	GLCmax (µg/m ³)	Net Change (µg/m ³)
NO ₂	Original	1-hr	58.43	-1.94
	Revised		56.49	

The maximum five-year average of the high-eighth-high (H8H) 1-hr average model concentrations was used as the GLCmax for each scenario.

3.0 Land Use. Medium roughness and elevated terrain were used in the modeling analysis. These selections are consistent with the selections made in the July 2010 modeling.

4.0 Modeling Emissions Inventory. The modeled emission point source parameters and rates were consistent with the modeling report. The source characterization used to represent the sources was appropriate.

A NO_x to NO₂ conversion factor was applied to the modeled NO_x emission rates. However, using a conversion factor is inconsequential for this analysis since the purpose of the demonstration was to show a decrease in predicted concentrations for the revised sources rather than compare the results to the 1-hr NO₂ NAAQS standard.

5.0 Building Wake Effects (Downwash). Input data to Building Profile Input Program Prime (Version 04274) are consistent with the plot plan and modeling report.

The buildings were not consistent with the aerial photography. The buildings were shifted approximately 30 meters to the northwest. However, the results should not be significantly affected since the point sources and receptor grid were shifted uniformly, and the source-to-building and source-to-receptor distance relationships are maintained.

6.0 Meteorological Data.
Surface Station and ID: Dallas, TX (Station #: 3927)
Upper Air Station and ID: Stephenville, TX (Station #: 13901)
Meteorological Dataset: 1985, 1987-1990
Profile Base Elevation: 168 meters

7.0 Receptor Grid. The grid modeled was sufficient in density and spatial coverage to capture representative maximum ground-level concentrations.

8.0 Model Used and Modeling Techniques. AERMOD (Version 09292) was used in a refined screening mode to be consistent with the previous analysis. Significant differences in predicted concentrations between the two model versions are not expected (Versions 09292 and 11103). The most recent version of AERMOD should be used for all future modeling submittals.